

REMARKS

Favorable reconsideration of this application in the light of the amendments and the following remarks is respectfully requested. Claim 1 has been amended to require that the controller command the motorized drive arrangement to apply a torque to one or more of the ground-contacting elements as a function of the attitude of the support platform. Claim 14 has been similarly amended to require commanding the motorized drive to apply a torque to one to one or more of the ground contacting elements as a function of the attitude of the support platform. For support in the specification, see Fig. 5 and pages 6, lines 6-29. Claim 8 has been amended to depend on claim 3 instead of claim 2. No new matter has been added.

Specification

The specification has been objected to because the description of the drawings refers repeatedly to “one embodiment of the invention,” however the application appears to present more than one embodiment of the invention. Accordingly, the description of the drawings and detailed description of specific embodiments has been amended to change the words “one embodiment of the invention” to “an embodiment of the invention,” recognizing that not all the drawings necessarily depict the same embodiment of the invention.

Additionally, the office action suggests that the specification may improperly incorporate essential material by reference. More particularly, the office action notes that where U.S. Patent No. 6,302,230 (incorporated by reference at page 3, lines 23-24 of the subject application) incorporates essential material by reference (see U.S. Patent No. 6,302,230 at col. 6, lines 56-65), and that the further incorporation of essential material

into the subject application is improper. Applicants are unaware that any essential material has been incorporated into the subject application by reference, however Applicants are prepared to incorporate any material explicitly if there is material deemed by the Examiner to be either necessary or desirable for the fuller comprehension of the claimed invention.

Drawings

The drawings have been objected to under 37 CFR §1.83(a) as not showing every feature of the invention specified in the claims. More particularly, the office action asserts that the “frame” of claim 7 and a “remote control device” of claims 9 and 20 must be shown or the feature(s) cancelled from the claim(s). Accordingly, Applicants have amended Fig. 5 to include remote control device 37, and has amended the specification to refer to reference number 37. Additionally, Applicants have amended the specification to indicate that the frame may be, without limitation, first support platform 69, shown in Fig. 4.

35 U.S.C. §112

Claims 1-20 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. More particularly, the office action asserts that “motorized drive arrangement” is unclear, and therefore any prior having at least one motorized drive in any arrangement is understood to anticipate the instant invention.¹

Amended claim 1 requires: a motorized drive arrangement *for driving the at least one ground-contacting element*; and a controller commanding the motorized drive

¹ While Applicants will address issues of indefiniteness in the following paragraphs, Applicants traverse any implication that if an element of a claim is unclear, then any prior art containing that element anticipates the entire claimed invention. There is no such principle under US patent law.

arrangement *to apply a torque to one or more of the ground-contacting elements.* For support in the specification see page 5, lines 3 to page 7, lines 17. Accordingly, the limitation “motorized drive arrangement,” as required by the pending claims, drives at least one ground-contacting element, and upon command, applies a torque to one or more of the ground-contacting elements.

Claims 6-7 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The office action suggests that claims 6 and 7 establish a fixed point of reference for the first component which appears to be inconsistent with the first component being fixed relative to the surface. Additionally, the office action suggests that it is unclear what the frame refers to.

As described in the specification at page 2, lines 14-18, and recited in claim 5, the first component remains in a substantially fixed vertical position relative to the surface. Claims 6 and 7, which depend on claim 5, further recite that the first component is fixed relative to an axle and frame, respectively.²

Claims 6 and 7 are clear, and they are consistent with the limitation set forth in claim 5. For example, the axle and frame of claims 6 and 7, respectively, may be in a substantially fixed vertical position relative to the surface (e.g., the axle is centered exactly one wheel radius above the surface), such that the first component, which may be any component that is substantially fixed relative to the axle and frame of claims 6 and 7, respectively, is also in a substantially fixed vertical position relative to the surface.

An embodiment of a frame is depicted in Fig. 4 and referred to in the subject application at the amended paragraph beginning at page 5, line 15.

² For support in the specification, see page 2, lines 17-21.

Claim 8 has been amended to depend on claim 3, thereby mooting its rejection on grounds of failure of antecedent basis for “the distance sensor.”

Claim 9 was rejected under 35 U.S.C. §112, second paragraph, on grounds that Applicants’ specification and drawings failed to teach a remote control device, making the claim limitation unclear. Applicant request withdrawal of this rejection, drawing Examiner’s attention to page 4, lines 19-21, in the specification, where a remote control device is described, which may be, without limitation, an infrared or radio controlled remote control device.

35 U.S.C. §102

The office action rejected claims 1, 3, 4, 8, 11-13 and 14-20 under 35 U.S.C. §102(b) as being anticipated by Kamen et al. (U.S. Patent 5,791,425, hereinafter, “Kamen”).

Amended claim 1 is, in part, directed to a transporter for transporting a load over a surface. The transporter includes a support platform, and a sensor module for generating a signal characterizing *an attitude of the support platform with respect to the surface*. A motorized drive arrangement drives at least one ground-contacting element. A controller commands the motorized drive arrangement to apply a torque to one or more of the ground-contacting elements as a function of the attitude of the support platform.

In contrast, the Kamen reference discloses a transporter having a controller which commands a motorized drive arrangement to apply a torque to ground contacting elements as a function of *the pitch* of a support (see Kamen at col. 5, lines 26-64 and col. 11, line 62 to col. col. 12, line 6, and col. 21, lines 12-27), where the Kamen reference

defines “pitch” to be the inclination angle with respect to gravity, i.e., with respect to the vertical. (Kamen, col. 5, lines 43-45.)

“**Pitch**,” thus, refers (in the Kamen reference, in particular) to an orientation with respect to the local vertical, i.e., with respect to gravity.

“**Attitude**” refers to orientation with respect to the local underlying surface.³

A control law may be based on a variable of pitch or a variable of attitude. These are very different control laws, however, and one does not suggest another.⁴ Once the complete distinction of the control laws is understood, it should be clear that the prior art Kamen reference neither teaches nor suggests the present invention.

The current claim 1 requires that the controller command the motorized drive arrangement to apply a torque to one or more of the ground-contacting elements as a function of *the attitude* of the support platform. Sensors A and B of the Kamen reference are not sensors of this sort at all. Sensors A and B of Kamen are for sensing a distance to a stair riser and ground, respectively; these sensors are used to place the transporter in various modes, and not for applying torque to one or more ground contacting elements as a function of attitude (see Kamen at col. 21, lines 12-27).

Claim 1 therefore is allowable in view of Kamen. Claims 3, 4, 8, and 11-13 depend on and incorporate independent claim 1, and are allowable for the same reasons as discussed above with regard to claim 1, and are further allowable in view of the additional limitations set forth therein. Amended independent claim 14 and dependent claims 15 and 20 require commanding the motorized drive arrangement to apply a torque

³ “For purposes of the present description, platform 11 may be characterized by a fore-aft axis, a lateral axis, and an orientation with respect to the surface, which is referred to herein as an attitude.” Application, p. 4, lines 8-10.

to one or more of the ground-contacting elements as a function of the attitude. Thus, claims 14-20 are allowable for the same reasons as discussed above with regard to claim 1, and are further allowable in view of the additional limitations set forth therein.

Claims 1-4, 8, 11-13 and 18 to 20 are rejected by Kishi et al. (U.S. Patent 4,722,547, hereinafter, "Kishi").

Kishi discloses an automotive suspension control system which controls *a shock absorber* based on a roll-intensity signal acquired from ultra-sonic sensors (see Kishi at col. col. 5, lines 6-12). This is very different from claim 1, and, more particularly, does not teach the requirement of claim 1, that the controller command the motorized drive arrangement *to apply a torque to one or more of the ground-contacting elements* as a function of the attitude of the support platform.

Claim 1 therefore is allowable in view of Kishi. Claims 2-4, 8, and 11-13 depend on and incorporate independent claim 1, and are allowable for the same reasons as discussed above with regard to claim 1, and are further allowable in view of the additional limitations set forth therein. Dependent claims 18 to 20 depend on amended claim 14 and require commanding the motorized drive arrangement to apply a torque to one or more of the ground-contacting elements as a function of the attitude. Thus, claims 18-20 are allowable for the same reasons as discussed above with regard to claim 1, and are further allowable in view of the additional limitations set forth therein.

⁴ The local surface may be hilly, in which case the vertical is not perpendicular to the surface. And the angle of the vertical with respect to the local surface may vary from location to location.

35 U.S.C. §103

Claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Kamen in view of Woods et al. (U.S. Patent 4,468,050, hereinafter, "Woods"). As stated above, Kamen fails to disclose that the controller commands the motorized drive arrangement to apply a torque to one or more of the ground-contacting elements as a function of the attitude of the support platform. Woods also fails to teach this limitation, and is instead directed towards an adaptive suspension system. Since neither Kamen nor Woods teach this required limitation of claim 2, the embodiment of claim 2 is deemed nonobvious over any combination of these references.

Claims 5, 9-11 and 18-20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kishi in view of Sugasawa. (U.S. Patent 4,749,210). As stated above, Kishi fails to disclose that the controller commands the motorized drive arrangement to apply a torque to one or more of the ground-contacting elements as a function of the attitude of the support platform. Sugasawa also fails to teach this limitation, and is instead directed towards an automotive suspension control system. Since neither Kishi nor Sugawawa teach this required limitation of claims 5, 9-11, and 18-20, claims 5, 9-11, and 18-20 are deemed nonobvious over any combination of these references.

Applicant believes that no extension of time is required; however, this conditional petition is being made to provide for the possibility that the applicant has inadvertently overlooked the need for an extension of time. If any additional fees are required for the timely consideration of this application, please charge deposit account number 19-4972.

Application No. 10/617,598
Amdt. dated January 7, 2005
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It is believed that the application is in condition for allowance. Consideration of the application and issuance of a notice of allowance are respectfully requested.

Respectfully submitted,



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